

REMARKS

Claims 1-31 are pending in the present patent application. Claims 1-19 stand rejected, and claims 20-31 have been withdrawn from consideration. This application continues to include claims 1-31.

Claims 1 and 14 were rejected under 35 USC §112, first paragraph, as failing to comply with the enablement requirement. The Examiner asserts that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner asserts that the specification lacks clear written description of how to make and/or use a microprocessorless network adapter, and that nowhere does the specification disclose a microprocessorless adapter or teach how to configure and/or communicate via the ASIC network adapter card without using a microprocessor.

Applicants respectfully submit that their specification contains a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention of claims 1 and 14.

Applicants respectfully request reconsideration of the rejection of claims 1 and 14 in view of the following.

Claim 1 is directed to a computer network. Claim 1 recites, in part, a microprocessorless network adapter interconnecting said at least one host computer and said at least one peripheral device.

The microprocessorless network adapter of claim 1 includes adapter firmware 16, such as is illustrated in Applicants' Fig. 1. It is well known in the art that firmware pertains to software or data that has been written into read-only memory.

As set forth in Applicants' specification, adapter firmware 16 contains several microcode modules that execute communications and data management tasks. These tasks include, for example: device identification, media access control, device status reporting and tracking, data stream management, USB host management, and power management. All of these code modules might be integrated into one or more electronic modules or application specific integrated circuits (ASIC's) 18. Thus, the Ethernet network adapter 10 with host USB function can include ASIC's 18 and support electronics 20 without requiring a microprocessor. That is, the peripheral device network adapter 10 can be microprocessorless (see Applicants' specification at page 5, lines 5-13).

In addition, each of the above-enumerated tasks performed by the microcode modules, i.e., device identification, media access control, device status reporting and tracking, data stream management, USB host management, and power management, are individually described in Applicants' specification; see Applicants' specification from page 5, line 15 to page 10, line 17.

Accordingly, Applicants' specification discloses a microprocessorless network adapter.

With regard to the Examiner's assertion that their specification does not teach how to configure and/or communicate via the ASIC network adapter card without using a microprocessor, Applicants specification clearly provides for configuring the microprocessorless adapter. For example, Applicants' specification provides that "The

peripheral device network adapter 10 uses, for example, internet protocol addressing. The internet protocol address(es) are assigned by a device driver 22 (Fig. 2) or utility 24 operating on a host computer 26 remotely attached to the network.” (See Applicants’ specification at page 5, lines 27-29).

Hence, Applicants’ specification teaches how to configure network adapter 10, since it is known in the art how to configure a device with internet protocol addressing using a device driver or utility operating on a host computer remotely attached to a network.

In addition, Applicants’ specification provides that “to utilize adapter 10, driver software 30 is installed in each computer on the network, and the network adapter 10 can be configured to only respond to commands from that driver software 30.” (See Applicants’ specification at page 7, lines 6-11).

Further, Applicants’ specification additionally discloses as follows, from page 7, line 12 to page 8, line 8):

The present invention operates on the assumption that device drivers 22 on network computers incorporate a sub-system that communicates with the firmware 16 in the adapter 10. In a standalone configuration, device drivers 22 take control of a system port on the computer operating system and communicate directly to peripherals over a communication link attached to the system port. In a network configuration, additional tasks are added to the device driver 22 to manage the packets of data sent and received from the peripheral 32 over the network link 34.

The network adapter 10 of the present invention contains firmware 16 that complements the communications subsystem in the device driver 22 on the host network computer and provides logic to interpret commands and to process data. Once a particular transaction is initiated, this firmware module accepts or rejects data packets received over the network. The firmware module passes on to the peripheral 32 data that is expected and in the correct order, and rejects data that is either from other sources or out of sequence until the transaction is completed.

The peripheral device firmware adapter 10 may be capable of detecting and processing inbound data before passing the processed data on to client devices 32. For example, the adapter 10 detects that a printer data stream contains portable document format (PDF) or joint photographic experts group (JPEG) files that are processed into data suitable for printing by a client printer 32. Similarly, data in an Apple MacIntosh file format could be converted to Disc Operating System (DOS) file format before being sent on to a client storage device. This function is bi-directional. A raw data file from a client scanner could be compressed into a standard image file format before sending on for storage on a host computer attached to the network.

In one embodiment, the adapter 10 contains all the code needed to support a variety of printers and other devices. However, in other embodiments the adapter has only a basic code set and additional code can be transferred to flash memory in the adapter during an installation process. The additional code might provide updates to the basic code set or provide unique function to support features of the attached peripheral 32.

Thus, as set forth above, Applicants' specification teaches how to communicate via adapter 10 using firmware module 16 and using device driver 22 operating on a host computer.

Applicants respectfully submit that the use of device drivers, operating on networked computers, for communication, and the use of firmware, are well known within the art, and that hence, Applicants' specification discloses how to communicate via the ASIC network adapter card without using a microprocessor.

Accordingly, Applicants respectfully submit that their specification contains a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention of claim 1 and hence, respectfully request the Examiner to withdraw the rejection of claim 1 under 35 USC §112, first paragraph.

For substantially the same reasons as set forth above with respect to claim 1, Applicants respectfully request the Examiner to withdraw the rejection of claim 14 under 35 USC §112, first paragraph.

Claims 1-19 were rejected under 35 U.S.C. §102(e) as being anticipated by Cone, et al., U.S. Patent Application Publication No. 2002/0078118 A1 (hereinafter, Cone). Applicants respectfully request reconsideration of the rejection of claims 1-19 in view of the following.

Cone is directed to a network interface ASIC that allows direct attachment for an appliance, such as a printer device (paragraph 2). Cone discloses an ASIC that substantially removes or reduces the need for standard components (such as a CPU, RAM and flash memory, internal embedded software, and a fully network-standard-compliant network controller) that are typically distributed among several devices in a system (paragraph 14). An ASIC 10 allows direct attachment between an appliance 14 and a network having a network device 16, which can include network controllers or adapters such as Ethernet controllers, media access control (MAC) controllers, PCI controllers, input/output (I/O) controllers such as small computer system interface (SCSI) controllers, network interface cards (NICs), switches, routers, or other such devices (paragraph 16, Fig. 1). Examples of the appliance 14 can include printer devices such as a printer or a print server, graphic display devices, disk drives, or other peripheral devices or parallel port-equipped devices (paragraph 17).

Applicants believe that claims 1-19 patentably define Applicants' invention over Cone, for at least the reasons set forth below.

Claim 1 is directed to a computer network. Claim 1 recites at least one host computer; at least one peripheral device; and a microprocessorless network adapter interconnecting said at least one host computer and said at least one peripheral device.

Cone does not disclose, teach, or suggest a microprocessorless network adapter interconnecting at least one host computer and at least one peripheral device, as recited in claim 1.

Applicants respectfully direct the Examiner's attention to Applicants' Fig. 1, which illustrates a network adapter in accordance with the present invention. It is noted that Fig. 1 depicts the network adapter being connected to a computer via a network link. Thus, the network adapter of claim 1 provides connection directly to the network, which is what a network adapter is well known in the art to do.

In contrast, Cone discloses that ASIC 10 allows direct attachment between an appliance 14 and a network having a network device 16 (paragraph 16, Fig. 1). Thus, the Cone ASIC 10 is not a network adapter, since it requires connection to a network via a network device 16, such as a network controller or an adapter (Fig. 1), which Cone simply does not disclose, teach, or suggest to be microprocessorless.

Since the Cone ASIC 10 does not connect directly to the network, and since it requires a network device, such as an adapter, to connect the appliance 14 to the network, it is clear that ASIC 10 is not adapter.

For example, Cone clearly discloses that ASIC 10 interconnects an appliance 14 with a network device, rather than interconnecting at least one host computer and at least one peripheral device, as recited in claim 1.

Thus, even assuming arguendo that the Cone ASIC 10 performs some network communications functions for appliance 14, ASIC 10 does not disclose, teach, or suggest a network adapter, which is well known in the art to connect directly to the network, and which the Cone ASIC 10 clearly does not do. For example, referring again to Applicants' Fig. 1, it is clearly seen that Applicants' network adapter connects directly to the network.

In addition, Cone simply does not disclose, teach, or suggest a host computer, much less interconnecting at least one host computer and the at least one peripheral device.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (MPEP 2131).

Since each and every element as set forth in claim 1 is not found, either expressly or inherently described in the Cone reference, Applicants respectfully submit that Cone does not anticipate claim 1.

Claim 1 is thus believed allowable in its present form, and Applicants respectfully request the Examiner to withdraw the rejection of claim 1 under 35 U.S.C. § 102(e).

Claims 2-13 are believed allowable due to their dependence on otherwise allowable base claim 1. In addition, claims 2-13 further and patentably define Applicants' invention over Cone.

For example, claim 9 is directed to the network of claim 1, wherein said adapter is configured to manage power on said at least one peripheral device.

In contrast to claim 9, Cone simply does not disclose, teach, or suggest an adapter configured to manage power on a peripheral device. Rather, Cone merely discloses that ASIC

10 allows direct attachment between an appliance 14 and a network having a network device 19, such as network controllers or adapters, without disclosing that ASIC 10 manages power on appliance 14.

In rejecting claim 9, the Examiner relies on Cone paragraph 33 and claim 18. However, Cone paragraph 33 and claim 18 clearly relate to a state machine that is part of controller 43 that is itself part of ASIC 10. Thus, the relied-upon Cone passage and claim relate to managing power in the Cone ASIC 10 itself (see Cone Fig. 1, which depicts controller 43 as being part of ASIC 10), not managing power on a peripheral device.

Since Cone does not disclose, teach, or suggest each and every element as set forth in claim 9, i.e., an adapter configured to manage power on the peripheral device, claim 9 is not anticipated by Cone.

Accordingly, claim 9 is believed allowable in its own right.

Claim 10 is directed to the network of claim 1, wherein said adapter is configured to send said at least one peripheral device at least one command to go into a low-power sleep mode until said adapter detects inbound data bound for said at least one peripheral device.

Cone simply does not disclose, teach, or suggest an adapter for substantially the same reasons as set forth above with respect to claim 1, much less an adapter configured to send any command to at least one peripheral device to go into a low power sleep mode, further less until the adapter detects inbound data bound for the at least one peripheral device, as recited in claim 10. Cone simply does not disclose, teach, or suggest anything akin to sending a command to any peripheral device to go into a low power sleep mode.

Rather, as set forth above with respect to claim 9, Cone clearly discloses managing power on ASIC 10 itself, not a peripheral device.

Since Cone does not disclose, teach, or suggest each and every element as set forth in claim 10, claim 10 is not anticipated by Cone.

Accordingly, claim 10 is believed allowable in its own right.

Claim 11 is directed to the network of claim 1, wherein said adapter is configured to at least one of send a wake-up command to said at least one peripheral device and verify an active status of said at least one peripheral device before accepting the inbound data.

Cone does not disclose, teach, or suggest anything akin to an adapter configured to at least one of send a wake-up command to the at least one peripheral device and verify an active status of the at least one peripheral device before accepting the inbound data, as recited in claim 10.

Rather, as set forth above with respect to claim 9, Cone clearly discloses managing power on ASIC 10 itself, not a peripheral device.

Since Cone does not disclose, teach, or suggest each and every element as set forth in claim 11, claim 11 is not anticipated by Cone.

Accordingly, claim 11 is believed allowable in its own right.

Claim 12 is directed to network of claim 1, wherein said adapter is configured to perform automatic USB enumeration.

Although Cone discloses that embodiments of the Cone invention may be implemented with non-PCI systems, such as universal serial bus (USB), Cone simply does not disclose, teach, or suggest an adapter that is configured to perform automatic USB enumeration.

Since Cone does not disclose, teach, or suggest each and every element as set forth in claim 12, claim 12 is not anticipated by Cone.

Accordingly, claim 12 is believed allowable in its own right.

Claim 14 is directed to a network adapter comprising: at least one application specific integrated circuit; and support electronics, wherein said adapter is microprocessorless.

Cone does not disclose, teach, or suggest a microprocessorless network adapter for substantially the same reasons as set forth above with respect to claim 1.

Since each and every element as set forth in claim 14 is not found, either expressly or inherently described in the Cone reference, Applicants respectfully submit that Cone does not anticipate claim 14.

Claim 14 is thus believed allowable in its present form, and Applicants respectfully request the Examiner to withdraw the rejection of claim 14 under 35 U.S.C. §102(e).

Claims 15-19 are believed allowable due to their dependence on otherwise allowable base claim 14. In addition, claims 15-19 further and patentably define Applicants' invention over Cone.

For example, claim 16 is directed to the adapter of claim 14, wherein said adapter is configured to interconnect at least one peripheral device and at least one host computer.

As set forth above with respect to claim 1, Cone does not disclose, teach, or suggest a host computer, and hence, Cone does not disclose, teach, or suggest wherein the adapter is configured to interconnect at least one peripheral device and at least one host computer.

Since Cone does not disclose, teach, or suggest each and every element as set forth in claim 16, claim 16 is not anticipated by Cone.

Accordingly, claim 16 is believed allowable in its own right.

Claim 18 is directed to the adapter of claim 14, wherein said application specific integrated circuit is configured to perform automatic USB enumeration.

Claim 18 is believed allowable in its own right for substantially the same reasons as set forth above with respect to claim 12.

Accordingly, for at least the reasons set forth above, Cone does not disclose, teach, or suggest the subject matter of claims 1-19. Claims 1-19 are thus believed allowable in their present respective forms, and Applicants' thus respectfully request the Examiner to withdraw the rejection of claims 1-19 under 35 USC §102(e).

For the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Moreover, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the pending claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Paul C. Gosnell". The signature is fluid and cursive, with the first name "Paul" being the most prominent.

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